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Essential Details in the Conduct of Labor.

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ESSENTIAL DETAILS IN THE CONDUCT OF LABOR.*

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Obstetrics is a branch of surgery, and surgery is a science of the most tedious detail. No surgeon is really safe who does not pay attention to minutiæ. The lying-in woman is a surgical patient, for she has been wounded. The site of the placenta is a large, open wound, and there is generally traumatism of the cervix, and often of the vagina and perineum. Dr. Houghton thinks the proper duration of the lying-in period can not be decided except from a surgical standpoint. He allows two weeks for surgical rest in bed, one week for passive motion which consists of changing from the bed to the arm chair or lounge, and moving gently about the room. The strained ligaments, and other supporting structures of the pelvis, now need moderate activity for their development. The fourth week is devoted to general nutrition by means of exercise, sunlight and fresh air.

If we grant that an obstetrical patient is a surgical one, attention to detail will assume the important place it should occupy. Nothing that reduces the risks of the child-bearing woman can be considered trivial.

Since labor is a natural event, there seems to exist a feeling that Providence is bound to look out for the patient. When Semmelweiss began his observations in the Vienna Hospital in 1846, women were dying of septic fever at the rate of one in six of those confined, and Providence did not interfere. If nature had a chance, she would do very well, but she is not always capable of managing a patient previously poisoned by man. Semmelweiss believed that every effect had a cause. He observed that the death rate was much lower in a new ward than in the old. He could not believe this was the result of accident, and he tried all kinds of experiments to discover the real

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cause of the difference. When a professor died of a dissecting wound, he received a useful hint. Later, a pregnant woman, suffering from cancer, was examined in the clinic, and twelve other pregnant women were examined after her; eleven of these patients died with puerperal fever. This remarkable series of cases made the truth evident, and Semmelweiss straightway issued a set of the most stringent rules. The adoption of the precautions he insisted upon caused the death rate in the old ward to fall at once.

The talk about Providence has been a great obstacle in the way of scientific advance in obstetrics. Four years before Semmelweiss issued his rules at Vienna, Oliver Wendell Holmes in America wrote a paper on puerperal fever which aroused most bitter prejudice. These are the facts that called forth the essay. A certain patient died of what we now call septicæmia. The doctor, who did the *post mortem* pricked his finger, and soon after attended several women in labor. They all had septic fever and at the end of a week, the doctor himself died of blood poisoning. It was easy to account for the illness of the women on the score of Providence, but the death of the doctor was a different matter. For this there must be a cause, and the affair must be investigated. Dr. Holmes had, of course, only the vaguest idea of the under-lying truth. He had no conception of the bacteria which Pasteur has since isolated, yet he claims, and rightly, that when facts are unquestionable, theory must follow, keeping time as it best may.

The essay of Dr. Holmes startled the world, partly because the truth was startling, but also because it was expressed in such vigorous, pungent English. The laity could understand both his science and his logic. He asserted that the physicians and the disease often entered hand in hand into the sick room, and he closes with these words: "The pestilence carrier of the lying in chamber must look to God for pardon, for man will never forgive him". The statements in the essay were expressed so picturesquely and forcibly that they stung. Of course, his facts were disagreeable and inconvenient, but it seems impossible that a man like Dr. Meigs, of Philadelphia, could say in defense of the physicians that, when one man had seventy cases

of puerperal fever in less than one year, it could be explained on the ground of his having a large practice, and thus seeing more bad cases. He says, "I prefer to attribute these cases to accident, or Providence, of which I can form a conception, rather than to a contagion, of which I cannot form any clear idea". These words sound like the echo of centuries past, but they were written only forty years ago. Busy bacteria have so little reverence for the learning of a college professor, that they continued to thrive and multiply, in spite of such discouraging sentiments.

A great deal of personal abuse was heaped on Dr. Holmes because of this essay which claimed that puerperal fever was contagious. In answer he says, "I take no offense, and attempt no retort. No man makes a quarrel with me over the counterpane that covers a mother with her new-born infant at her breast"; and he adds, "I am too much in earnest for either humility or vanity." These well known words are quoted because they express so clearly the proper spirit of the conscientious obstetrician.

Dr. Holmes advised the physician to stop practice for a month, if he had two cases of puerperal fever, one closely following the other. If there were three cases in succession, the attendant must surely consider himself the cause of the contagion. Dr. Holmes mentions the case of a doctor who did a *post mortem* on a patient, dead of puerperal fever, then took out the pelvic viscera, put them in the pocket of his coat, carried them to the class room and handled them there, and immediately after went to a labor case wearing the same clothes. I believe he left the viscera outside the lying-in chamber, but he might as well have kept them in his pocket, for the woman died, anyway. It makes one shudder to think of the needless dangers to which women used to be so carelessly exposed.

The lowering of the death rate in obstetrical cases has been making steady progress of late. Forty years ago, the average death rate in maternity hospitals was one in ten. In the London Maternity, at one time, forty per cent had septic fever, though the death rate was not above the average. The excuse given for the occurrence of so much fever was that the patients

of the lower class were not clean, they had low morals and little intelligence, and only the most difficult cases were sent to the hospital. The fallacy of such reasoning is shown by present statistics. The women admitted to the Sloane Maternity in New York City are a low class. Their faces seem quite out of harmony with the purity of their surroundings in the hospital; but in the first thousand cases there was only one death from sepsis, and that patient was septic when she entered. In 1883 the death rate at the New York Maternity was high. There were nine deaths in one month. Dr. Garrigues felt it necessary to adopt the most elaborate precautions, and by doing so he reduced the death rate from nearly seven per cent to less than one per cent. From sepsis it was only four-tenths of one per cent. At the Preston Retreat in Philadelphia there have been a thousand cases with no deaths at all. There is some difference between such statistics and those when sixteen per cent of the women were dying in the Vienna Hospital.

It really seems as if the time might come when the physiological function of labor would be no more dangerous than is digestion. But this must be impossible,until the methods used in private practice are greatly improved. Hospital cases receive the most scrupulous and elaborate attention, but private patients are often neglected. The laity seem to think that any person of ordinary common sense can manage a normal labor case. In New York city, any cook who gets tired of the kitchen, may register her name, pay fifty cents and become a midwife. A physician pithily says that, "if the men who make the laws had to bear the children, there would be better protection for the child and its parent." One-half the births in New York city are attended by midwives. In Brooklyn two-thirds of the still-births occur in the practice of these *sages femmes.* Schatz says that often these women are not capable; but they are lazy and do not examine. A perfectly normal case does fairly well under them, but the inaction which preserves the mother from the danger of an unclean finger, is disastrous to the child.

Even physicians seem imbued with the popular fallacy that a normal labor case requires no special attention or forethought. So many times a doctor has taken chances and not

suffered thereby, that any extra precautions seem needless. The attendant may neglect to examine the urine in ninety-nine cases of pregnacy and no harm result, but in the one-hundredth case neglect may give rise to well-founded regret.

Dr Smyly of the Rotunda Hospital, Dublin, says: "Septic infection is believed to be uncommon in private practice. This is a dangerous mistake. The same precautions are as absolutely necessary as in hospitals." But how to carry out sanitary measures in an ordinary home is the question. The practical application of well-known principles is difficult, because we meet with so many varying circumstances, and so much obstinacy and indifference on the part of nurses who have not been trained, and so many patients themselves are entirely ignorant of sanitary laws. If the attendant does not see the patient until she is in labor, the conditions are only to a limited degree under his control; but if he makes a visit during the last two weeks of pregnancy, a great deal may be accomplished in the way of effective sanitary precautions. This visit prior to labor is the most important one the physician makes.

He should indicate, at this time, what he thinks the most suitable room for a confinement. Sunlight is a great germicide, and a dark room is sure to be dusty. There should be no carpet on the floor of the confinement room. Most women can easily be induced to have some house-cleaning done. When the carpet is once removed it need not be replaced till after the labor. Rugs or pieces of carpet can be thrown down, and these can be taken out of the sick room to be cleaned of dust. Matting and linoleum are not objectionable, because they can be wiped off with a damp cloth. The patient should have this maxim impressed upon her: "Dust is dangerous."

The bed should be metal, iron or brass. A suggestion to this effect may avail for another labor, if not for this. The iron hospital cot is not expensive and is well adapted for confinement cases. A wide, low, sagging bed has many objections. It is always a difficult point to decide about the mattress. Of course feathers are uot to be endured, and a bed of this kind should be removed as soon as discovered. A patient of mine argued that because she had already had two children on a

certain feather-bed, that was sufficient reason why that particular bed, and no other, should be used for her third labor. The old-fashioned straw-bed, with fresh straw and newly washed ticking, was sweet and wholesome; but if this cannot be obtained, a new mattress of husk or excelsior will answer as well. At least, the mattress should either be new or freshly cleaned, no matter what the kind. Particular inquiry should be made with reference to shoddy wool. In doubtful cases it is well to rip the mattress open to see if the interior is honest. If the patient is impressed with the fact that shoddy woolen rags may have come from the pest-house, she will be more likely to take pains to procure a more suitable bed for her confinement. The mackintosh that is to cover the mattress and also the one used under the hips, should be thoroughly scrubbed and disinfected. Nothing should be used on the bed that has not been freshly washed and sunned. Old comforts are an abomination, but new comforts made of cheese cloth and white rose cotton are allowable. These are light, soft and agreeable, while heavy bedding tends to make the aching patient restless and feverish.

It would be well if the room could be cleaned and the bed prepared, and neither be used again until the onset of labor. Of course the room must be aired and sunned every day so as to be fresh and sweet for the use of the patient. If it is necessary to use the chamber every night, an iron hospital cot should stand in the room ready prepared for the labor and the patient can be quickly transferred to this from the bed in which she has been sleeping.

During the confinement ordinary cotton sheets may be placed under the patient's hips in order to protect the bedding from discharges, but a regular accouchment sheet of wood-wool is much better. These thick, soft sheets absorb liquids well and are said to be sterile, as they have been treated with corrosive sublimate. The patient could prepare a similar one herself by using borated absorbent cotton and boiled cheese cloth. Wood-wool pads to receive the lochia can be purchased ready prepared, but ones that answer very well may be manufactured at home. Ordinary cotton can be used, if it is baked well and covered with the cheese cloth. Only the softest ma-

terial should be used; the parts are so swollen and tender that ordinary cloth is much too harsh.

The patient should see to it that her nurse wears a clean cotton dress. A perfectly new nail brush should be provided for the use of the physician during labor, and for the nurse to use afterward in scrubbing her own hands and those of the patient. A new fountain syringe is a necessity. Cases of infection have been traced to the use of the neighborhood syringe. Every physician must be prepared to give a hot uterine douche; in case of sudden hemorrhage when the cervix is slow in dilating, the vaginal douche is a valuable aid in relaxing the parts. If the reservoir were made of agate ware it would be better, but new rubber thoroughly disinfected with boiling water before use, will generally answer. If there is not already a large earthen bed-pan in the house, one should be procured. It is desirable that every patient should buy her own catheter. She will generally be willing to incur the trifling expense, if she understands that in some cases labor may be shortened by the use of this instrument. It is hardly prudent to leave a newly delivered woman without a catheter in the house, and if the nurse must use it, it is far safer that she have a new instrument.

A bottle of carbolic acid should be bought and an ounce or two of pure glycerine. Carbolized glycerine, three per cent, is necessary as a lubricant for the fingers, the nozzle of the syringe, the catheter and the forceps. It is not often we have a hemorrhage that can not be controlled by the hand, hot water and ergot; but sterilized vinegar and borated cotton should be provided, in case it is necessary to swab out the uterus with an astringent. It is well to have ice and lemons also. Water should be boiled and put into large bottles with cotton corks, for it may be necessary to lower the temperature of a douche very quickly.

The patient should be directed when labor begins, to have the pubic hair closely cut, and then the whole genital region should be washed with soap and water and afterward bathed with some antiseptic solution. An enema should be given in every case, so as to clear the rectum as completety as possible of any offending material. Long clean leggins of gauze under-

wear, and over them clean stockings, should be put on in order to avoid any chill from exposure.

Inquiry should be made at the visit prior to labor, if there is a comfortable sitz-bath tub in the house. Nothing is more effectual in relieving the piercing pains of cervical dilatation than sitting in hot water. Most sitz-tubs to be obtained are constructed without any regard to comfort. The back should be high, the front low and the interior roomy, so the woman in labor can sit comfortably, with her head supported and her feet touching the floor. The use of the sitz-tub should begin in the early months of pregnancy. It insures local cleanliness and prevents pruritus, relieves aching, aids sleep and is a general nerve sedative. The bath should be followed by a thorough rubbing of the abdomen with cocoanut oil which penetrates so readily that the skin is kept soft and flexible and the clothing is not soiled. For several weeks before labor the perineal region should be kept oiled and soft.

Most authorities agree that it is advisable to make a pelvic examination before labor begins. A pelvimeter is a very convenient instrument, but much may be learned about the size of the pelvis by the use of the hand alone. By sweeping the finger around the bony rim an idea can be obtained about the size of the superior strait, and the sacro sub-pubic diameter can be measured directly on the hand. It is important to notice whether the pubic arch is normally wide and open, or if it is narrow and approaches the male type.

In most cases the presentation of the foetus is easily determined by abdominal palpation before labor begins. The patient generally dislikes manipulation of the external surface when she is actually in labor, but beforehand she usually makes no objection. By pressing in deeply above the os pubis the round cannon-ball head can be grasped between the hands. By arching both hands over the upper extremity of the fundus the rounded breech can be felt. Placing one hand on each side of the abdomen the continuous outline of the back will be noticed, generally on the right side, and the small irregular parts on the left. The patient will often aid the diagnosis by saying the motion is constantly on the left side.

By putting one hand on the breach and the finger of the other internally on the head, the foetus can be moved between the hands and its position very well appreciated. This conjoined manipulation is very satisfactory and can easily be done while the finger is exploring the pelvis. If a breech presentation is discovered, it can be rectified, or if that is not done, at least the attendant is forewarned and thus may be forearmed.

The abdomen should be measured. The normal size is thirty nine inches at term. Any great increase of this measurement would have a significance in reference to the amount of amniotic fluid and the presence of twins.

The sound of the fœtal heart-beat is generally very distinct in the latter part of pregnancy. Failure to hear it would point to something abnormal. Positive evidence is most satisfactory, but negative evidence is not without value.

It is hardly necessary to state that an examination of the urine should be made and if albuminuria exits, special attention should be directed to the kidneys.

If the visit and examination prior to labor have been made, the attendant will have little care at the actual onset of labor. His ordinary dusty clothing should not be worn. A short white coat and white apron are most convenient, but a surgical gown can be improvised out of a sheet. The hands and arms should be scrubbed with ethereal soap. A new nail brush should be used and the nails carefully cleaned with a knife or metal nail-cleaner. A solution of bichloride, one to one thousand should be prepared. It is well to drop into this a tablet of permanganate of potash, for the red color prevents mistakes.

Before a vaginal examination is made the hand should be held in the bichloride one minute. Some authorities assert it is little short of criminal to make any internal examination,and we all concede that the fewer the chances for the introduction of foreign germs, the safer it is for the patient. The physician often wishes to ascertain the condition of the cervix, and when the water breaks, it may be advisable to confirm the diagnosis of the presentation. Two examinations before the head appears at the vaginal orifice will generally suffice, and even these may be dispensed with, if the diagnosis was made before the onset

of labor, and if there is evidence of satisfactory progress. The cries of the patient have some diagnostic value; during dilatation of the cervix, they are piercing, but during the expulsive stage they are low pitched and grunting in character. If the physician has been attending any doubtful case of surgery, or any infectious disease, no vaginal examination should be made. Here comes in the value of the visit prior to labor; for the presentation was diagnosed before the tissues were yielding and ready to absorb poisonous germs.

If necessary to puncture the bag of waters, the needle should be disinfected by heat and then kept in a carbolic solution till used. During descent of the head it may be for some reasons advantageous to insert the fingers in the rectum, but a decided objection to this proceedure is that it may be necessary to put the hand in the uterine cavity after the termination of labor, and the danger of infection would be greatly increased.

In order to avoid laceration of the perineum the head should be allowed to impinge on that structure for some time. When the tissues have been rendered soft and dilated, and the parietal bosses have escaped the pubic arch, the head may be shelled out of the vagina between the pains. The tendency of the patient to make violent expulsive efforts must be controlled, and if she cannot be made to keep her mouth open, chloroform should be given. During the regulation of the birth of the head, the vessel containing the bichloride should be conveniently near, so that the hand can be dipped in it between the pains. When the child is expelled, a piece of absorbent cotton wrung out of 1-2000 bichloride should be applied to the external parts, and the uterus grasped firmly. It will generally be possible to expel the placenta by Crede's method.

The washing of the patient should be done with borated cotton and not with old cloths. Any warm antiseptic solution may be used. The nurse should give her whole attention to the mother. If the baby is oiled and put in a warm place, that is all the attention it needs for several hours. The nurse or the husband should hold the uterus for one hour after labor, for this is the best prophylaxis against hemorrhage. If stitches have been taken in the perineum, the wound should be dressed like any other surgical wound. Dr. Kelly, of Johns

Hopkins recommends that a finely divided mixture of iodoform one part, and boracic acid seven parts, be thrown into the vagina and vulva, whether there is rupture or not. Any antiseptic powder is a grateful protection to the lacerated tissues. If iodoform is disagreeable and there is no rupture, after the first few days borated talcum may be dusted on the parts after each washing. For the first twenty-four hours it is necessary to keep a close watch of the uterus in reference to hemorrhage. During that time the ordinary binder, if employed, is in the way, but later if the patient so desires, the binder may be used as a matter of comfort.

Whether or not vaginal douches shall be given depends entirely on the ability of the nurse. The douches certainly are cleansing, they aid involution, they are grateful to the patient and a good sedative. If the nurse has a knowledge of asepsis, and will follow minute directions in regard to disinfecting the syringe with boiling water, and will see that the nozzle is surgically clean; if she will cleanse thoroughly the external parts of the patient and her own hands, then the douche may be ordered with a clear conscience. The patient should be warned about keeping her own nails and hands perfectly clean. Cases of septic fever in the Rotunda Hospital were traced to the fact that patients washed themselves with unclean hands.

It is undesirable that the nurse should use the catheter after labor, but in case this should be necessary, minute instructions must be given in reference to washing the external parts, especially about the meatus, disinfecting the catheter, oiling it with carbolized glycerine and inserting quickly.

When the milk begins to come the jacket breast bandage is a great comfort to the patient. Its use prevents that heavy sagging which is so disagreeable, and the lifting of the breast prevents stasis and engorgement. The jacket is called a Garrigues bandage, but is used in many hospitals in New York. In the Sloane Maternity it is used in every case and in their first thousand patients there was not a single instance of mastitis. The bandage is made of a yard of unbleached muslin. This is doubled, and places cut out of the upper edge to fit the neck, and deep arm holes are made. The bandage is pinned from below upward, while the breasts are raised. The

shoulders are pinned last. There should be enough width here to give efficient support from above.

Astringent preparations are often recommended to harden the nipples. Dr. Davis, of the New York Infant Asylum, who has had a large experience, thinks oil the natural remedy to render the epithelium cohesive. Oil, when applied to rough and chapped hands, has such a beneficial effect that this treatment seems rational and sensible. It is desirable to begin the use of the oily preparation directly after labor, and it would be better to use it four times a day during the last two weeks of pregnancy.

The chief dangers to be feared in an ordinary labor case are hemorrhage, sepsis and later, mastitis. Most of the precautions mentioned are in reference to these possible occurrences. For many reasons it seems wise to prevent visitors from entering the sick room, for at least one week. The excitement is not beneficial to the patient, and the callers may carry the dust of contagion in their garments.

It is hoped the details referred to in this paper will not seem pedantic, unreasonable or impracticable. Asepsis, which can never do harm, has been much more strongly dwelt upon than antisepsis, which has possible dangers. Excess of zeal is never advisable. I agree with Dr. Carroll when he says: "Antiseptic measures need hardly extend to a bichloride baptism of the child's advancing head, or its birth into a carbolized fog." And yet when one is disinclined to personal effort, it is easy to sneer at what may be called undue zeal in others.

It is a well known fact that many patients do very well in labor where no precautions of any kind are taken. Circumstances can not be so bad that some patients will not thrive. In the out-patient department of hospital practice, I have known cases where the family were too poor to have a light, the labor had to be conducted in the dark, and necessary utensils were so lacking, the baby had to be washed in the dish-pan and three days after labor the mother was down on her knees scrubbing. The patient did well enough, at least she did not die, but that is no argument in favor of such a method of management. It only proves some people are hard to kill.

The high-minded and conscientious physician should not

be satisfied because his patient gets along well enough. He should only be satisfied when he has given to each case the advantage of the best science available. It may be conceded that many of the details mentioned in this paper are wise and even necessary, but it may not be possible to adopt them in every case, especially when there is need for urgent haste. The conscience of the physician will be clear if he takes as many precautions as are practicable under the circumstances. If he makes a visit prior to labor and his suggestions are ignored, it is not his fault.

The teaching of sanitary science is the most discouraging thing in the world, yet it is the duty of the physician to faithfully instil its principles. Often there is no immediate result. It is here a little and there a little, precept upon precept. Growth is always slow. It takes women a long time to change their preconceived ideas. If a patient has had one or two labors in which she received no scientific attention, and yet made a good recovery, it is almost impossible to make her think any extra precautions are desirable. This is the fault of her previous physician who established a bad precedent. In talking with a patient about her former labors one sees at once whether or not she has been well instructed in sanitary matters. It is worthy the ambition of a conscientious physician to sow carefully, even though others shall reap the benefit.

There are many women who will not thank a physician for causing them any extra trouble and expense. In working for them against their own wills, he must remember "if they were grateful they were not so pitiable." But there is an intelligent class of women whom it is a delight to aid and instruct. There is something pathetic about the way they will follow the least directions of the physician. To be busied in preparations that will help to make the labor safe, tends to relieve the anxious forebodings of the last two weeks. A woman who would be willing to die of typhoid fever, can not endure the thought of her labor terminating fatally. There is the baby to be thought of. She knows that no amount of love and patience can ever teach a man what a young child needs. She is eager to live through the ordeal, and ready to adopt any measures conducive to that end.

The ideal of the physician should be to give to each obstetric patient the best chance possible for life, comfort and safety. He must see to it that no one can rightfully accuse him of any "voluntary blindness, any interested oversight or culpable negligence."